



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,079	02/17/2004	Norman Rice	115243.00005	1827
21324	7590	10/21/2004	EXAMINER	
HAHN LOESER & PARKS, LLP One GOJO Plaza Suite 300 AKRON, OH 44313-1076			CYGAN, MICHAEL T	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,079

Applicant(s)

RICE, NORMAN

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,7 and 11-19 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Hara (US 3,619,072). O'Hara discloses the claimed invention, a method of evaluating engine operation comprising receiving a oil sample from an engine and determining a profile of particulates in the oil, the profile having predetermined characteristics providing an indication of the operating condition of the engine and indicating whether the particulates are engine-based or oil-based. The profile of wear and breakdown (degradation) products is used as an "early warning system" to assess reliability, predict failure and operating condition of the electrical equipment. Engines are considered to be "electrical equipment" as claimed, since the claims are given their broadest possible interpretation during examination, and engines utilize electrical energy during operation. See entire disclosure, especially Figure 1; column 1, lines 6-56; column 2, lines 30-75; and column 3, lines 22-75. The particulate profile includes mechanical wear particles and dirt (column 2, lines 62-75), thus indicating the source (interior or exterior) of the particulates. The

oil is subjected to a composition profile, the analysis being performed by infrared spectroscopy, and the composition including oil oxidation products, non-volatile hydrocarbons (glycols) and nitration products (nitrates); see column 3. Comparison of the profiles to standard reference profiles yields information on engine wear and oil degradation; see column 2, lines 68-75; column 3, lines 23-27 and 31-70. The analysis acts as an "early warning system", enabling prediction of a maintenance status of the engine and oil; see column 1, lines 32-34.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Hara (US 3,619,072) in view of Reintjes (US 5,572,320). O'Hara teaches the claimed method except for providing information relating to the presence of techtites, which are spherical particles (see applicant's specification paragraph 0026 at page 9). Reintjes teaches a method of determining a profile of particulates in oil through optical shape analysis. The profile characteristics include the shape, size, and aspect ratio of the particles, and the type of particles including those produced from cutting wear (cutting

particles); see column 1, lines 21-35 and column 5, lines 16-39. This optical shape comparison would indicate the presence of spherical particles (i.e., techtites). The profiling occurs through optical magnification (microscopy); see column 2, lines 1-9 and column 3, lines 6-27. The shapes are "classified", with the classification results indicating engine conditions, operating status, and prediction of nearness to engine failure; see column 5, lines 25-29. The analysis is performed on-line; see abstract and Figure 1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use information relating to the presence of techtites as taught by Reintjes in the invention taught by O'Hara to form part of the profile, since Reintjes teaches optical shape comparison and sizing to determine engine condition and failure prediction.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Hara (US 3,619,072) in view of Reintjes (US 5,572,320) as applied to the rejection of claim 2, further in view of Fishgal (US 4,625,923). O'Hara teaches the claimed method except for providing information relating to the presence of filming, fibres, coking, ferrous and non-ferrous particles, oil oxidation, or machined (tempered metallic) particles. Fishgal teaches a method of evaluating an insulating dielectric liquid comprising obtaining a sample of lubrication oil and determining a profile of the contaminants such as filming (col 3 ln 10), fibres (col 1 ln 19), coking (col 1 ln 44), ferrous and non-

ferrous particles (col 3 ln 27-28), oil oxidation (col 3 ln 8), or machined (tempered metallic) particles (col 1 ln 18-24) in the oil through ferrography or optical microscopy to determine the reliability and working life of the lubrication system; see column 1, lines 11+ and columns 3-4. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use information relating to the presence of filming, fibres, coking, ferrous and non-ferrous particles, oil oxidation, or machined (tempered metallic) particles as taught by Fishgal in the invention taught by O'Hara to form the profile, since Fishgal teaches such features to distinguish the reliability of a lubricated system.

Allowable Subject Matter

4. Claims 6, 7, and 11-19 are allowed.
5. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Terminal Disclaimer

6. The terminal disclaimer filed on 30 September 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent Number 6,691,557 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

7. Applicant's arguments filed 30 September 2004 have been fully considered but they are not persuasive. Applicant argues that an engine is not "electrical equipment" as claimed, in a manner consistent with the specification. However, an engine is electrical equipment, since it consumes and produces electrical energy. Additionally, the alternator may be considered as a component of the overall engine, with the oil inside the engine as the insulating component. Applicant's arguments pertaining to the scope of the claims in view of the specification are considered with the understanding that limitations in the specification are not read into the claims. Accordingly, while "power transmission electrical equipment" is defined in the specification to comprise only certain terms, "electrical equipment" is undefined and could comprise any equipment utilizing or producing electricity. See specification paragraph 9 on pages 3-4.

Conclusion

8. The following reference, not applied as prior art, is relevant to the applicant's invention. Kirtley, Jr. et al. "Monitoring the Health of Power Transformers" IEEE Computer Applications in Power, January 1996, pp. 18-23.
9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See

MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

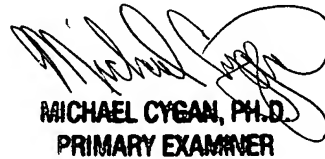
10. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER